

### REMARKS

Favorable reconsideration of this application, in view of the present amendment and in light of the following discussion, is respectfully requested.

Claims 1-14, 16-29, 32, and 34-39 are currently pending. Claims 1, 2, 10-12, 14, 16-18, 21, 23-25, 27-29, 34-37, and 39 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, the specification was objected to as failing to provide proper antecedent basis for the claimed “computer-readable medium”; Claims 32 and 34-39 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter; Claims 1-7, 10-14, 16-18, 20-29, 32, and 34-39 were rejected under 35 U.S.C. §102(e) as being anticipated by Chau et al. (“Comparison of Two Approaches to Building a Vertical Search Tool: A Case Study in the Nanotechnology Domain”); and Claims 8, 9, and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Chau et al. reference in view of U.S. Patent No. 5,754,938 to Herz et al. (hereinafter “the ‘938 patent”).

Applicants respectfully traverse the objection to the specification and respectfully submit that the specification provides antecedent basis for a computer-readable medium. In particular, Applicants note that paragraphs [0045]-[0052] in the published application discuss the implementation of the present invention using a computer. See also Figure 1 which shows an information and retrieval system based around a general purpose computer 10. In particular, Figure 1 shows that the general purpose computer includes a disk storage 30 for programs and data. See paragraph [0045], which also states that “...the programs being stored on the disk storage 30 and provided, for example, by the network 50, a removable disk (not shown) or a pre-installation on the disk storage 30.” Applicants respectfully submit that a disk storage unit is a well-known computer-readable medium. Thus, Applicants

respectfully submit that the specification provides support for a computer-readable medium storing a program, which is recited in independent Claims 32 and 34. Accordingly, Applicants believe that the objection has been overcome.

Applicants respectfully traverse the rejections of Claims 32 and 34-39 under 35 U.S.C. §101 as being directed to non-statutory subject matter. In this regard, Applicants note that page 3 of the outstanding Office Action states that “[t]he claimed invention is addressed to a ‘computer-readable medium’ that can be interpreted as referring to lines of programming within a computer readable medium....” However, Applicants respectfully submit that a program consisting of lines of code is clearly different than a computer-readable medium. As discussed in M.P.E.P. §2106.01, functional descriptive material recorded on a computer readable medium is patentable subject matter because it becomes structurally and functionally interrelated to the medium.

In particular, the M.P.E.P. §2106.01 states that, while computer programs as computer listing *per se* may not be patentable, “[i]n contrast, a claimed computer readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer programs functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.” In this regard, Applicants note that Claims 32 and 34 have been purposely written in the form preferred by the USPTO, and it is unclear to Applicants why those claims have been rejected. Applicants respectfully submit that a computer-readable medium encoded or storing a computer program, which when executed by a computer causes the computer to perform a particular method, or, e.g., to generate a user interface, recites functional descriptive material, and is clearly statutory under 35 U.S.C. §101. See M.P.E.P. §2106.01. Accordingly, Applicants respectfully traverse the rejection of Claims 32 and 34-39 under 35 U.S.C. §101.

Amended Claim 1 is directed to an information retrieval system in which a set of distinct information items map to respective nodes in a self-organizing map by mutual similarity of the information items, so that similar information items map to nodes at similar positions in the self-organizing map, wherein the self-organizing map is trained upon reduced dimension characterizations of the information items, the system comprising: (1) a user control configured to define a search criterion for selecting a subset of the information items represented by the self-organizing map, the search criterion being applied using a standard keyword search technique; (2) a detector configured to detect those positions within the self-organizing map corresponding to the subset of the information items selected by the standard keyword search technique; (3) a graphical user interface configured to display points representing only those positions within the self-organizing map corresponding to the selected subset of information items; and (4) a processor, responsive to the selected subset of information items selected using the search criterion, configured to provide one or more representations representative of the information content of the selected subset of information items, wherein each of the information items represented by the self-organizing map includes image data; and wherein the processor is responsive to the selected subset of information items and causes the graphical user interface to display one or more images obtained from the image data included in the selected subset of information items selected using the search criterion so as to represent the content of the selected subset of information items. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.

Applicants respectfully submit that the rejections of Claim 1 (and all associated dependent claims) are rendered moot by the present amendment to Claim 1.

The Chau et al. reference is directed to two approaches of building a domain-specific search tool, a server site search engine and a client site search agent. In particular, the Chau

et al. reference discloses the NanoSearch system and the NanoSpider system. See Figures 2 and 4 of the Chau et al. reference. Regarding the NanoSearch approach, the Chau et al. reference discloses that, as shown in Figure 3, the user can enter a search term into a user interface and retrieval results are obtained and ranked based on the popularity and relevancy of the pages. Further, the Chau et al. reference discloses that, in addition to showing the search results as a traditional rank list, the NanoSearch system also displays a picture of a flower (the “Nanoflower”) that represents the quality of the particular web page, such that the size of the flower represents the term frequency, and the number of petals represents the number of inlinks. Further, the NanoSearch system displays a larger flower to indicate the pages that are more relevant to the search string, and a flower with more petals indicates that the page is more popular. Further, as shown in Figure 2.5, the NanoSearch system displays a 2D map of the search results obtained from the search term, such that the user can select one of the subtopics in the 2D map to see a list of the search results directed to that subtopic. The NanoSpider approach shown in Figure 4 provides a similar 2D map for the user.

However, Applicants respectfully submit that the Chau et al. reference fails to disclose a detector configured to detect those positions within the self-organizing map corresponding to the subset of the information items selected by the standard keyword search technique, as recited in amended Claim 1. In this regard, Applicants note that Claim 1 has been amended to clarify that the user control is configured to define a search criterion for selecting a subset of the information items represented by the self-organizing map, the search criteria being applied using a standard keyword search technique. Rather, the Chau et al. reference discloses displaying a 2D map of all of the search results obtained using the keyword search, so as to illustrate subtopics of the obtained search results. However, Applicants note that the 2D map disclosed by the Chau et al. reference is prepared based on all of the search results. Thus, in the Chau et al. system, all of the points in the self-

organizing map are displayed, because by definition the self-organizing map comes from the keyword search results.

Further, Applicants respectfully submit that the Chau et al. reference fails to disclose a graphical user interface configured to display points representing only those positions within the self-organizing map corresponding to the selected subset of information items, as recited in amended Claim 1. In a non-limiting example, Applicants note that the claimed system gives the user a way of visualizing how the search results fit into the larger context of the trained self-organizing map. In contrast, as discussed above, the Chau et al. reference merely discloses that all of the items in the self-organizing map, which are obtained from the search results, are displayed.

Further, Applicants respectfully submit that the Chau et al. reference fails to disclose that the processor is responsive to the selected information items and causes the graphical user interface to display one or more images obtained from the image data included in the selected subset of information items selected using the search criteria so as to represent the content of the selected subset of information items. Rather, the Chau et al. reference merely discloses displaying a generated image that represents the quality of a particular search result, i.e., displaying the Nanoflower that indicates the relevancy and/or the popularity of the particular search result. However, Applicants note that the displayed flower is not **an image obtained from the image data included in an information item**, as required by Claim 1. The Nanoflower is not an image that is obtained from image data of the corresponding search result, as required by Claim 1. Rather, the Nanoflower disclosed by the Chau et al. reference is merely an icon generated by the system to communicate the relative importance of the search results, and is unrelated to any images included in the selected information items obtained from the keyword search, as required by amended Claim 1.

Accordingly, for the reasons stated above, Applicants respectfully submit that amended Claim 1 (and all similarly rejected dependent claims) patentably define over the Chau et al. reference.

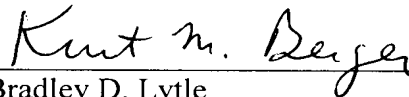
Independent Claims 21 and 34 recite limitations analogous to the limitations recited in Claim 1, and have been amended in a manner analogous to the amendment to Claim 1. Accordingly, for the reasons stated above, Applicants respectfully submit that the rejections of Claims 21 and 34 (and all similarly rejected dependent claims) are rendered moot by the present amendment to Claims 21 and 34.

Regarding the rejection of dependent Claims 8, 9, and 19, Applicants respectfully submit that the '938 patent fails to remedy the deficiencies of the Chau et al. reference, as discussed above. Accordingly, Applicants respectfully submit that the rejections of Claims 8, 9, and 19 are rendered moot by the present amendment to Claim 1.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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